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introducing an oxidizing agent into the oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the oxidation reaction zone to form the N-(phosphonomethyl)glycine product; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the oxidation reaction zone.

349. (new) The process as set forth in claim 348 wherein the oxidizing agent is an O₂-containing gas and is introduced simultaneously with the aqueous feed stream into the oxidation reaction zone through an ejector nozzle of the ejector nozzle loop reactor.

350. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a liquid reaction medium within an oxidation reaction zone provided by a continuous stirred tank reactor, the oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction suspended in the liquid reaction medium, the catalyst comprising a noble metal deposited on a particulate carbon support, the liquid reaction medium comprising the N-(phosphonomethyl)glycine product;

introducing an oxidizing agent into the oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the oxidation reaction zone to form the N-(phosphonomethyl)glycine product; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the

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oxidation reaction zone, the reaction mixture effluent withdrawn from the oxidation reaction zone being substantially free of the particulate catalyst, the stirred tank reactor comprising an internal catalyst filter for preventing the particulate catalyst from being withdrawn from the oxidation reaction zone with the reaction mixture effluent.

351. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a liquid reaction medium within an oxidation reaction zone provided by a continuous stirred tank reactor, the oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction suspended in the liquid reaction medium, the catalyst comprising a noble metal deposited on a particulate carbon support, the liquid reaction medium comprising the N-(phosphonomethyl)glycine product;

introducing an oxidizing agent into the oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and the particulate catalyst from the oxidation reaction zone;

separating the particulate catalyst from the reaction mixture effluent to form a catalyst recycle stream comprising the separated particulate catalyst; and

introducing at least a portion of the particulate catalyst contained in the catalyst recycle stream into the oxidation reaction zone.

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352. (new) The process as set forth in claim 351 wherein catalyst is purged from the catalyst recycle stream.

353. (new) The process as set forth in claim 352 wherein fresh catalyst is added to the catalyst recycle stream.

354. (new) The process as set forth in claim 351 wherein the particulate catalyst is separated from the reaction mixture effluent in a catalyst filter to form the catalyst recycle stream and a filtrate substantially free of the particulate catalyst and comprising the N-(phosphonomethyl)glycine product.

355. (new) The process as set forth in claim 354 wherein the catalyst filter is adapted for continuous separation of particulate catalyst from the reaction mixture effluent.

356. (new) The process as set forth in claim 355 wherein the catalyst filter is a continuous cross-flow filter.

357. (new) The process as set forth in claim 355 wherein the catalyst filter is a continuous back-pulse filter.

358. (new) The process as set forth in claim 357 wherein the back-pulse filter comprises a filter element and a portion of the filtrate is used to back-pulse the filter element and remove separated catalyst from the filter element.

359. (new) The process as set forth in claim 357 wherein the reaction mixture effluent further comprises dissolved CO₂, the reaction mixture effluent being passed through a flash tank before being introduced into the catalyst filter to lower the pressure on the reaction mixture effluent and remove dissolved CO₂ from the reaction mixture effluent.

360. (new) The process as set forth in claim 357 wherein at least a portion of the particulate catalyst contained in the

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catalyst recycle stream passes through a catalyst holding tank before being introduced into the oxidation reaction zone.

361. (new) The process as set forth in claim 360 wherein the catalyst holding tank is substantially free of O_2 .

362. (new) The process as set forth in claim 361 further comprising introducing a non-oxidizing gas into the catalyst holding tank.

363. (new) The process as set forth in claim 361 wherein the residence time of the recycled catalyst in the catalyst holding tank is at least about 2 minutes.

364. (new) The process as set forth in claim 354 wherein the filtrate comprises unreacted N-(phosphonomethyl)iminodiacetic acid substrate, the process further comprising:

continuously introducing the filtrate into a second oxidation reaction zone;

introducing an oxidizing agent into the second oxidation reaction zone; and

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product.

365. (new) The process as set forth in claim 364 wherein the second oxidation reaction zone is substantially back-mixed in the liquid phase.

366. (new) The process as set forth in claim 365 wherein the second oxidation reaction zone is provided by a second stirred tank reactor.

367. (new) The process as set forth in claim 365 wherein the second oxidation reaction zone is provided by an ejector nozzle loop reactor.

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368. (new) The process as set forth in claim 364 wherein the second oxidation reaction zone is provided by a fixed bed reactor.

369. (new). A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by an ejector nozzle loop reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate;

introducing an oxidizing agent into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate from the first oxidation reaction zone;

continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone containing a catalyst for the oxidation reaction, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

introducing an oxidizing agent into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product; and

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continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the second oxidation reaction zone.

370. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by a continuous stirred tank reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate;

introducing an O₂-containing gas into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate from the first oxidation reaction zone;

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continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone provided by an ejector nozzle loop reactor, the second oxidation reaction zone being substantially back-mixed in the gas and liquid phases and containing a heterogenous particulate catalyst for the oxidation reaction suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

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introducing an O₂-containing gas into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the second oxidation reaction zone.

371. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by a first continuous stirred tank reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimensions, the concentration of the particulate catalyst within the first oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone;

introducing an oxidizing agent into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and

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unreacted N-(phosphonomethyl)iminodiacetic acid substrate from the first oxidation reaction zone;

continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone provided by a second continuous stirred tank reactor, the second oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimension, the concentration of the particulate catalyst within the second oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

introducing an oxidizing agent into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product;

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and the particulate catalyst from the second oxidation reaction zone; and

separating the particulate catalyst from the reaction mixture effluent withdrawn from the second oxidation reaction zone to form a catalyst recycle stream comprising the separated catalyst.

372. (new) The process as set forth in claim 371 further comprising introducing at least a portion of the particulate

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catalyst contained in the catalyst recycle stream into at least one of the first and second oxidation reaction zones.

373. (new) The process as set forth in claim 372 wherein the particulate catalyst is separated from the reaction mixture effluent in a catalyst filter to form the catalyst recycle stream and a filtrate substantially free of the particulate catalyst and comprising the N-(phosphonomethyl)glycine product.

374. (new) The process as set forth in claim 373 wherein the catalyst filter is adapted for continuous separation of particulate catalyst from the reaction mixture effluent.

375. (new) The process as set forth in claim 374 wherein the catalyst filter is a continuous back-pulse filter.

376. (new) The process as set forth in claim 375 wherein the back-pulse filter comprises a filter element and a portion of the filtrate is used to back-pulse the filter element and remove separated catalyst from the filter element.

377. (new) The process as set forth in claim 375 wherein at least a portion of the particulate catalyst contained in the catalyst recycle stream passes through a catalyst holding tank before being introduced into at least one of the first and second oxidation reaction zones.

378. (new) The process as set forth in claim 377 wherein the catalyst holding tank is substantially free of O₂.

379. (new) The process as set forth in claim 378 further comprising introducing a non-oxidizing gas into the catalyst holding tank.

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380. (new) The process as set forth in claim 378 wherein the residence time of the recycled catalyst in the catalyst holding tank is at least about 2 minutes.

381. (new) The process as set forth in claim 372 wherein at least a portion of the particulate catalyst contained in the catalyst recycle stream is introduced into the first oxidation reaction zone concurrently with the N-(phosphonomethyl)iminodiacetic acid substrate.

382. (new) The process as set forth in claim 372 wherein at least a portion of the particulate catalyst contained in the catalyst recycle stream is introduced into the second oxidation reaction zone concurrently with the unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate aqueous reaction mixture effluent.

383. (new) The process as set forth in claim 372 wherein a portion of the particulate catalyst contained in the catalyst recycle stream is introduced into the first oxidation reaction zone concurrently with the N-(phosphonomethyl)iminodiacetic acid substrate and another portion of the particulate catalyst contained in the catalyst recycle stream is introduced into the second oxidation reaction zone concurrently with the unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate aqueous reaction mixture effluent.

384. (new) The process as set forth in claim 372 wherein catalyst is purged from the catalyst recycle stream.

385. (new) The process as set forth in claim 384 wherein fresh catalyst is added to the catalyst recycle stream.

386. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-

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(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by a first continuous stirred tank reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimensions, the concentration of the particulate catalyst within the first oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone;

introducing an oxidizing agent into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product, unreacted N-(phosphonomethyl)iminodiacetic acid substrate and the particulate catalyst from the first oxidation reaction zone;

separating the particulate catalyst from the intermediate reaction mixture effluent withdrawn from the first oxidation reaction zone to form a catalyst recycle stream comprising the separated catalyst;

introducing at least a portion of the particulate catalyst contained in the catalyst recycle stream into the first oxidation reaction zone concurrently with the N-(phosphonomethyl)iminodiacetic acid substrate;

continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone provided by a second

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continuous stirred tank reactor, the second oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimension, the concentration of the particulate catalyst within the second oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

introducing an oxidizing agent into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the second oxidation reaction zone.

387. (new) The process as set forth in claim 386 wherein the particulate catalyst is separated from the intermediate reaction mixture effluent in a catalyst filter to form the catalyst recycle stream and a filtrate substantially free of the particulate catalyst and comprising the N-(phosphonomethyl)glycine product and the intermediate aqueous feed stream introduced into the second oxidation reaction zone comprises the filtrate.

388. (new) The process as set forth in claim 387 wherein the reaction mixture effluent withdrawn from the second oxidation

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reaction zone further comprises the particulate catalyst, the process further comprising separating the particulate catalyst from the reaction mixture effluent withdrawn from the second oxidation reaction zone to form a second catalyst recycle stream comprising the separated catalyst.

389. (new) The process as set forth in claim 388 wherein the particulate catalyst is separated from the reaction mixture effluent in a second catalyst filter to form the second catalyst recycle stream and a second filtrate substantially free of the particulate catalyst and comprising the N-(phosphonomethyl)glycine product.

390. (new) The process as set forth in claim 389 further comprising introducing at least a portion of the particulate catalyst contained in the second catalyst recycle stream into at least one of the first and second oxidation reaction zones.

391. (new) The process as set forth in claim 390 wherein at least a portion of the particulate catalyst contained in the second catalyst recycle stream is introduced into the second oxidation reaction zone concurrently with the unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent.

392. (new) The process as set forth in claim 391 wherein the average age of the catalyst in the first oxidation reaction zone is different from the average age of the catalyst in the second oxidation reaction zone.

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393. (new) The process as set forth in claim 392 wherein the average age of the catalyst in the first oxidation reaction zone is greater than the average age of the catalyst in the second oxidation reaction zone.

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394. (new) The process as set forth in claim 392 wherein the average age of the catalyst in the first oxidation reaction zone is less than the average age of the catalyst in the second oxidation reaction zone.

395. (new) The process as set forth in claim 389 wherein the catalyst filters are adapted for continuous separation of particulate catalyst from the intermediate reaction mixture effluent and the reaction mixture effluent.

396. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by a first continuous stirred tank reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimensions, the concentration of the particulate catalyst within the first oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone;

introducing an oxidizing agent into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

cooling the liquid reaction medium in the first oxidation reaction zone;

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continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate from the first oxidation reaction zone;

continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone operated adiabatically and provided by a second continuous stirred tank reactor, the second oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimension, the concentration of the particulate catalyst within the second oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

introducing an oxidizing agent into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the second oxidation reaction zone.

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397. (new) A process for preparing an N-(phosphonomethyl)glycine product by oxidizing an N-(phosphonomethyl)iminodiacetic acid substrate in a reactor system, the process comprising:

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introducing an aqueous feed stream comprising the N-(phosphonomethyl)iminodiacetic acid substrate into a first oxidation reaction zone provided by a first continuous stirred tank reactor, the first oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to about 100 μm in their largest dimensions, the concentration of the particulate catalyst within the first oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone;

introducing an oxidizing agent into the first oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the first oxidation reaction zone to form the N-(phosphonomethyl)glycine product;

cooling the liquid reaction medium in the first oxidation reaction zone;

continuously withdrawing an intermediate reaction mixture effluent comprising the N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate from the first oxidation reaction zone;

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continuously introducing an intermediate aqueous feed stream into a second oxidation reaction zone provided by a second continuous stirred tank reactor, the second oxidation reaction zone being substantially back-mixed in the liquid phase and containing a heterogenous particulate catalyst for the oxidation reaction comprising a noble metal deposited on a particulate carbon support and suspended in a liquid reaction medium comprising the N-(phosphonomethyl)iminodiacetic acid substrate, the carbon support exhibiting a particle size distribution such that about 95% of the catalyst particles are from about 3 to

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about 100 μm in their largest dimension, the concentration of the particulate catalyst within the second oxidation reaction zone being from about 0.1 to about 10 wt.% based on the total weight of catalyst and the liquid reaction medium in the oxidation reaction zone, the intermediate aqueous feed stream comprising N-(phosphonomethyl)glycine product and unreacted N-(phosphonomethyl)iminodiacetic acid substrate obtained in the intermediate reaction mixture effluent;

introducing an oxidizing agent into the second oxidation reaction zone;

continuously oxidizing the N-(phosphonomethyl)iminodiacetic acid substrate in the second oxidation reaction zone to form additional N-(phosphonomethyl)glycine product;

cooling the liquid reaction medium in the second oxidation reaction zone; and

continuously withdrawing a reaction mixture effluent comprising the N-(phosphonomethyl)glycine product from the second oxidation reaction zone.

398. (new) The process as set forth in claim 397 wherein the liquid reaction medium in the second oxidation reaction zone is cooled in an external heat transfer recirculation loop comprising a heat exchanger associated with the second stirred tank reactor.

399. (new) The process as set forth in claim 397 wherein the temperature of the liquid reaction medium in the first oxidation reaction zone is maintained at from about 95°C to about 105°C and the temperature of the liquid reaction medium in the second oxidation reaction zone is maintained at from about 100°C to about 105°C.